

REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 1-9 are presently active in this case. The present Amendment amends Claims 1, 3-4, and 6-8; and adds new Claim 9 without introducing any new matter.

The outstanding Office Action objected to Claims 6-7 under 37 C.F.R. § 1.75(c) as being in improper dependent form. Claims 1, 6 and 7 were rejected under 35 U.S.C. § 102(e) as anticipated by Chinthammit et al. (U.S. Patent Publication No. 2004/0080467, hereinafter “Chinthammit”). Claims 2 and 8 were rejected under 35 U.S.C. §103(a) as unpatentable over Chinthammit. Claims 4 and 5 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chinthammit and further in view of Nasserbakht et al., (U.S. Patent No. 6, 072,443, hereinafter “Nasserbakht”). Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Chinthammit and further in view of Fernie et al. (U.S. Patent No. 5, 933,125, hereinafter “Fernie”).

In response to the objection to the multiple claim dependency of Claims 6-7 under 37 C.F.R. § 1.75(c), the multiple claim dependency is deleted.

Independent Claims 1 and 8 are amended to recite features related to a relative position of the eyes of an user. The features find non-limiting support in Applicant’s disclosure as originally filed, for example starting from p. 12, l. 15 of Applicant’s specification. In addition, new independent Claim 9 is added, presenting similar features as independent Claim 1, but in device claim language. Claims 1, 3, 4, and 6-8 are also amended to correct minor formalities. No new matter has been added.

Briefly summarizing, Applicant’s Claim 9 is directed to an image display device. The image display device includes an image sensor, an image display, *a detector configured to*

detect a position of the eyes of a face relative to the image display by image recognition from an image captured by said image sensor; and a processor configured to alter a position of a location of an image displayed by the image display based on a detection result of the detector.

As explained in Applicant's disclosure for example with respect to the specification at page 4, ll. 8-17, the image display device can prevent image blurring of images that are displayed on an image display. Such blurring may occur when there are changes in the relative positional relationship between the image display device and the eyes of the user, for example when the user is looking at the image display device when traveling in a train. Please note that these comments based on Applicant's specification are for explanatory purposes only and are not intended to limit the scope of the claims.

Turning now to the applied references, Chinthammit describes an augmented reality system, where a virtual image is projected onto a real world environment, to create an augmented reality environment, for example for display of information and graphics on a windshield of a car. (Chinthammit, Abstract, p. 2, ¶ [0020], ll. 13-15.) Chinthammit uses a scanned beam tracker 16 that emits tracking light 48 on a scanning field of view 22 that impinges on detectors 24, 26 (Chinthammit, p. 2, ¶ [0021], ll. 12-18.) Chinthammit explains that “[r]eturning tracking light is detected to determine the display position and orientation.” (Chinthammit, p. 2, col. 1, ¶ [0021], ll. 22-23.)

In an additional embodiment, Chinthammit uses a virtual retinal display 106 that uses an eye tracker 128 used to track an eye position. For this detection, Chinthammit uses a beam splitter 120 and a spherical mirror 122 in a head coupled unit 100, and Chinthammit asserts that the eye tracker can locate the position of the eye. However, Applicant's Claim 9 clearly requires that “a detector [is] configured to detect a position of the eyes of a face *relative to the image display by image recognition* from an image captured by said image

sensor.” (Claim 9, portions omitted, emphasis added.) In Chinthammit, the augmented reality imaging system merely detects a position of the eye’s pupil relative to the head-coupled unit. Chinthammit thereby explains that the eye tracking light reflects from the viewer’s eye back to the beam splitter 120 and to a detector 124 that is referenced with the head-coupled unit. It seems that from the description of Chinthammit, an angle of view of the user’s eye is detected, or the location of the eye’s pupil, and not the position of the eye itself relative to the image display, as required by Applicant’s Claim 9. The system as described in Chinthammit cannot detect such position of the eye itself relative to a display, since the detection system is located in the head-coupled unit, and therefore will only detect the location of the pupil of the user’s eye. As shown with respect to Chinthammit’s Fig. 3, the display will always move together with the user’s eye, since they are mechanically coupled together.

The remaining reference Nasserbakht, used by the pending Office Action to form a 35 U.S.C. § 103(a) rejection, also fails to remedy the deficiencies of Chinthammit, even if we assume that such a combination is proper. Nasserbakht recites that his “[o]ptical control 40 receives information from location and distance sensor 46 for modifying the image from image source 20 responsive to the location of the user relative to the ocular projection display 12.” (Nasserbakht, col. 4, ll. 45-49, Fig. 5.) However, Nasserbakht clearly fails to teach ***to detect a position of the eyes of a face*** relative to the image display by image recognition, as required by Claim 10. Nasserbakht merely detects the location of a user.

In addition, it is not clear from the record how Nasserbakht’s location of the user relative to the projection display could be incorporated into head-coupled unit of Chinthammit. Under such a modification, the user in Chinthammit could not wear the head-coupled unit for operation, and thereby Chinthammit’s augmented reality system could not function. Such modification would require a total reconstruction or redesign of the elements

of Chinthammit, and/or would clearly change the basic principle of operation of Chinthammit. There is no evidence that a person of ordinary skill in the art would be motivated to perform such changes and redesign.¹

The reference Fernie also fails to remedy the deficiencies of Chinthammit and/or Nasserbakht. Even if we assume that such combination is proper, all the references, Chinthammit, Nasserbakht, and Fernie, fail to teach the Claim 9 feature “*a detector configured to detect a position of the eyes of a face relative to the image display by image recognition* from an image captured by said image sensor.” (emphasis added.) Accordingly, Applicant respectfully traverses, and requests reconsideration of, this rejection based on these patents.²

Independent Claims 1 and 8 recite features analogous to the features recited in independent Claim 9. Accordingly, for the reasons stated above for the patentability of Claim 9, Applicant respectfully submits that the rejections of Claims 1 and 8, and all associated dependent claims, are also believed to be overcome in view of the arguments regarding independent Claim 9.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 1-9 is earnestly solicited.

¹ See In re Ratti, 270 F.2d 810, 813, 123 USPQ 349, 352 (reversing an obviousness rejection where the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.")

² See MPEP 2142 stating, as one of the three "basic criteria [that] must be met" in order to establish a *prima facie* case of obviousness, that "the prior art reference (or references when combined) must teach or suggest all the claim limitations," (emphasis added). See also MPEP 2143.03: "All words in a claim must be considered in judging the patentability of that claim against the prior art."

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicant's undersigned representative at the below listed telephone number.

Respectfully submitted,

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